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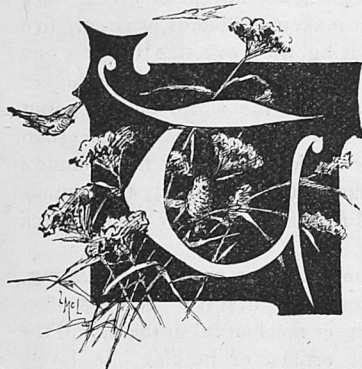
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## HINTS TO CHINA PAINTERS.

### V. PREPARING GOLD AND SILVER FOR PORCELAIN DECORATION.



THE number of metals which it is possible to employ in the decoration of porcelain is limited to three: gold, silver, and platinum. Of the advantage in the use of the first of these, which forms such a splendid auxiliary to the colors of the painter of porcelain, it is unnecessary to speak. Although gold is in common use, the method of its preparation is not generally understood, and as usually inferior preparations only are obtainable, I have thought that an account of the best method of preparing it would be useful to amateurs who might desire to prepare it themselves. There are two methods of doing this. In both the metal is dissolved in aqua regia and precipitated from the solution in the form of a brown powder. In one the gold is precipitated by the use of copperas, and in the other by mercury. The latter is less costly than the former, as the deposit of gold in the form of powder is of greater volume, but the gilding produced by it is not so heavy or so durable. It is this method that is generally adopted in the production of commercial wares, and any one who has used a table service decorated with such gilding does not need to be told how quickly it wears off under the action of repeated washing. I would, therefore, recommend the first method, precipitation by copperas, to those amateurs who can afford to incur the necessary outlay of time and money in order to decorate their porcelain with a fine and durable gilding.

The metal can be procured of the necessary degree of purity in the form of coin. That of the coinage previous to the year 1835, when the amount of alloy was increased, is the best. The introduction of California gold in 1848, moreover, changed the color of the coinage to a coppery and less desirable hue. Take a five dollar gold piece (one of less value can be used if so large a quantity is not desired), place it in the bottom of a graduated glass and pour about an ounce and a half of aqua regia upon it. Aqua regia is a compound of equal volumes of chlorohydric and nitric acids, which may be procured from a chemist. Let it stand until the next day, when, if the metal is not entirely dissolved, the process can be facilitated by pouring the solution of gold, which has been formed, into another vessel, and adding a little fresh aqua regia to that which remains. The solution of the gold in aqua regia forms a chloride of gold. This, it may be said in passing, is an article of commerce and can be procured of the chemist, but it is the better plan to dissolve the gold coin. It is not difficult to effect the solution of the metal, and it need not be disagreeable, although the fumes of the aqua regia are unpleasant. It is not necessary to carry on the process in a close room. The vessel in which the solution is effected can be placed outside the window or in an unoccupied apartment.

When the coin is entirely dissolved there will be a small residuum of white powder in the bottom of the glass. This is chloride of silver from the alloy in the gold. The solution of gold must be carefully poured off into another vessel to get rid of this deposit of silver. It must now be diluted with water, and to effect this it

can be separated into four parts, each of which is poured into a glass vessel which will hold about a pint. To each part add about half a pint of water and then add protosulphate of iron (copperas) previously dissolved in warm water, until a precipitate is formed. Precipitation will begin immediately upon the addition of the copperas, clouding the liquid, and the gold in the form of a rather light brown powder will begin to fall to the bottom of the vessel. Let it stand six hours, or until it has entirely settled, and then pour off the clear liquid from the precipitate. It would be better to save the liquid thus poured off and treat it again with copperas, as the gold held in solution may not all have been precipitated, and you may, by this means, obtain a greater quantity of the powder. Fill the vessels containing the precipitate of gold with clear water, let it stand until it settles, and then pour off the water and replace it by fresh, repeating the process two or three times. This is to wash the precipitate. Finally pour some chlorohydric acid upon it to eliminate the oxide of iron, which may be present from the decomposition by the water of an excess of copperas, and then wash it in

must not be adopted in this case, as the carbonate of potash will also precipitate the oxides of nickel and copper, and the presence of the smallest quantity of copper will injure the effect of the gilding.

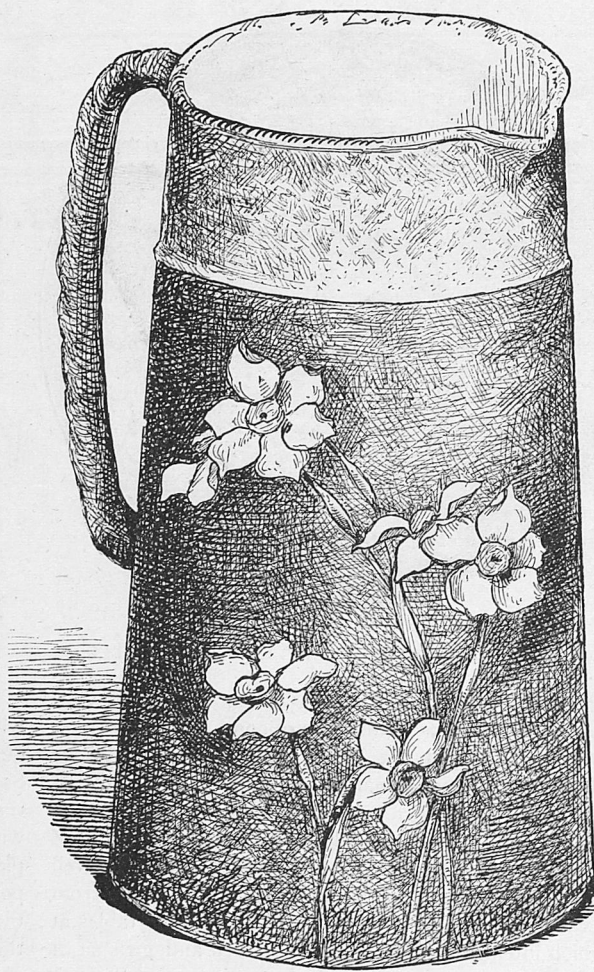
Mix one part of the flux described above with twelve parts of the gold powder. This flux is suited for firing upon hard porcelain. If the gold is intended for softer ware and for a lighter firing, borate of lead should be added. The powder is now ready for use, and may be rubbed down on the palette with a sufficient quantity of fat oil and spirits of turpentine to give it the proper consistency to be applied with the brush. Care must be taken, however, not to make it too thin, as it must be applied more thickly than the colors. It is best to keep it in the form of powder and to mix it with the oil, only as it is used; it will then flow better and be more brilliant.

Another method of applying it which, if skilfully performed, would be better for large surfaces, such as dead gold backgrounds, is to spread a sort of varnish upon the surface to be gilded, and then, when it has dried so as to be slightly tacky, to dust the gold powder in by means of a blending brush. A preparation called ground-laying oil can be procured from the decorators, which will answer this purpose, but a varnish for the application of gold can be made of asphaltum four parts, essence of turpentine six parts, and boiled linseed oil three parts. Boil the mixture half an hour, stirring it meanwhile with a stick upon the end of which a linen bag containing litharge has been fastened. The consistency of this varnish should be about that of a thick syrup. If it is too thin the fault can be remedied by evaporating the turpentine, if too thick by adding more.

The second or cheaper method of producing gold powder, mentioned above, is as follows: Take as before a five dollar gold piece and dissolve it in three fifths of an ounce of sal-ammoniac mixed with three twentieths of an ounce of nitric acid. Then dissolve two ounces of distilled mercury in one ounce of nitric acid, by the aid of a slight degree of heat. This gives the nitrate of the sub-oxide of mercury. Add the latter to the dissolved gold, a little at a time. It forms a voluminous precipitate of gold, which must be washed for some time in boiling water and then dried. The method of preparing for use is the same as that described for the precipitate procured by copperas.

There is also a preparation sold under the name of "bright gold." This may be classed under the head of lustres. Lustres are preparations of various metals in a very much diluted state, which, when applied thinly, give an iridescent effect. The one under consideration is a lustre made from gold which, if applied thinly, gives a pinkish iridescence, but, if applied more thickly, becomes "bright gold." It does not need burnishing, but comes from the fire with a brilliant, metallic lustre. It can be used effectively upon vases and other articles which will not be subjected to hard usage.

Silver is prepared for use upon porcelain in the following way: The metal is dissolved by pouring nitric acid upon it in small quantities at a time. The liquid solution is then placed in a wide-mouthed vessel and diluted with a considerable amount of distilled water. A piece of copper introduced into the solution will produce the precipitation of the silver, which will form in large flakes upon the surface of the copper. Agitate it until the silver is no longer separated, then pour off the liquid, leaving the precipitate in the bottom of the vessel. Wash it several times in warm water and then dry it. For a flux mix with it about one twelfth of the sub-nitrate of bismuth. It is necessary to apply three coats of silver, drying each in a stove before the next is laid. It is then fired, afterward burnished, and fired again. Silver can be applied on gold, or gold on silver, if the metals are pure.



DESIGN FOR A JUG WITH NARCISSUS DECORATION.

BY M. LOUISE MCLAUGHLIN. SEE NEXT PAGE.

boiling water. When it has settled pour off the water and transfer the still moist precipitate to a shallow vessel—a plate that will bear heat will do—and, placing it over or in front of a moderate fire, dry it.

We have now the gold precipitate in the form of a powder, which must be prepared for its use upon porcelain by grinding and the addition of a flux to make it adhere to the glaze. The rubbing down (it can scarcely be called grinding, as the powder will be found to already be very fine) may be facilitated by passing the powder through a piece of thin silk or silk muslin.

The flux is formed of nitrate of bismuth twelve parts to one part of pulverized borax. The nitrate of bismuth is formed from the precipitation by water of a solution of bismuth in nitric acid. Carbonate of potash is sometimes used to produce this precipitate, but this method



## VI. DECORATION OF THE JUG.

Paint the ground up to the line which passes around the jug, an inch or so from the top, with deep red-brown, laying the color on with a broad brush and allowing the brush marks to show, producing a mottled effect. The ground can also be varied by the addition of dark brown. Paint the handle in solid red-brown. After the ground is dry, draw the design with a lead pencil and scratch the color of the ground off between the outlines. Paint the shadows of the flowers with brown-green and a little black, and then lay in the local color with ivory-yellow. Paint the stems with grass-green and a very little deep blue-green, and the shadows nut-brown green. The little bracts on the stems are brown, shaded with brown and black. The band around the top of the jug which has been left plain is then decorated with gold. It can be decorated in a pattern of gold lines, or as is the one in the illustration, with gold which has been mixed rather thick, dabbled on with a hog's-bristle brush to produce a clouded effect of dots and splashes.

M. LOUISE MCLAUGHLIN.

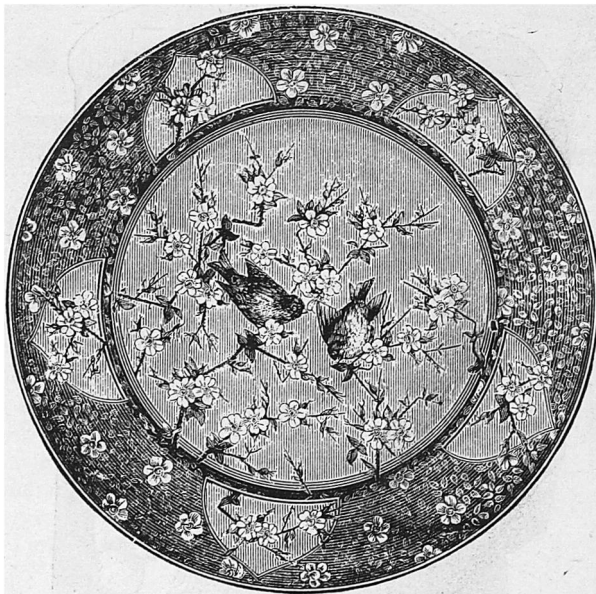
## WOMAN'S WORK ON DOULTON WARE.

CHINA and faïence decoration is in a fair way to be given over absolutely to women. A striking proof of this is afforded by the Doulton works in London or, to go farther away, by the Sèvres, Deck, and Limoges manufactures in France. At Sèvres there are three woman painters to one man; the Deck work is two-thirds done by women, and the Limoges seven-eighths, while the vast Doulton factory employs exactly two hundred and sixty women to thirty men!

No visitor to London, with a taste for the ceramic art, ought to leave that metropolis without paying a visit to the Doulton Museum at Lambeth. Even the most cursory survey of that dazzling exhibition—shelf upon shelf, case upon case, stand after stand, and chimney-piece after chimney-piece, laden with the most opulently and splendidly perfect as well as with the simplest examples of the world-famous wares—cannot but impress one with the idea that here is a sphere of art and industry in which woman is triumphant even though, as her detractors insist, she has never written a sonata or a tragedy or designed a church steeple.

Women have always been much employed in ceramic decoration, although never to the extent that they are at present, and the records of the famous British potteries of the last century, Wedgwood's, Coalport, Worcester, Derby, and others, show that no inconsiderable sums were sometimes paid for their skill, poor as was woman's recompense in those days as compared with that of men. In the Doulton factory the most artistic specimens are the work of the women, as any visitor may see for himself. Many of these young women are practised artists in other branches and constant exhibitors at the Academy, the Dudley, and various other exhibitions. Miss Hannah Barlow's work everybody who knows the picturesque Doulton ware at all can recognize at a glance—those spirited, natural, and yet idealized cattle, cats, dogs, horses, and other animals, incised into the clay and the sunk lines pencilled with color, so masterly in foreshortening and grouping that they are like a pastoral frieze around the object they adorn. Miss Barlow has been ten years with the Doultons, and has been the inspiration of many disciples, none, however, ever attaining quite to her picturesque naturalism and "verve," so appropriate to the subjects she takes. The lovers of "Doulton" see very much of this incised drawing, and the museum is rich in mugs, jugs, vases and beakers decorated with ideal subjects in delicate outlines and with the merest hint of picturesque detail, so well is the design kept subordinate to decorative principles, yet in ensemble quite as "pretty as a picture." One subject is a sketch of a young girl sitting upon an outlined rock and gazing far and wistfully away over a sea indicated by one solitary faint line. The maiden is of the nineteenth century, too modern to be Ariadne even with Ariadne's attitude and perhaps sorrow, but the forms are as pure as if their inspiration were severely Greek, and yet the total effect is by far more picturesque than sculptural. The Doulton ware in fact, as

everybody knows, is entirely picturesque in character, and its inspirations are mediæval rather than classic, as its color is suggestive of Flemish work of the sixteenth century. One exceedingly pretty decoration is an outline crescent moon with the usual face, not a swollen-cheeked masculine one, but a fair woman's countenance in profile, straight and regular in features, and passionless in expression as Diana herself. This outline drawing is all done by other young women, Miss Barlow occupying herself solely with animals. Certain styles of Doulton decoration seem to the uninitiated quite mechanical in manipulation, and therefore not artistic. These styles are seen in the objects covered all over with tiny stars, rosettes, scrolls, leaves, flowers, butterflies, and what not, so regular in size and design that they could only be made by machinery. So far the decoration is mechanical; nevertheless, the object becomes a thoroughly artistic product by reason of the fact that every one of these machine-moulded trimmings is set in place by deft hand and trained taste, so that the final result both in color and form is the direct offspring of human intelligence. Even the white pearlings or beadings, with which so many of the medallions and panels are bordered, are applied by hand, the soft clay dotted from the point of a brush, or sometimes applied in a hardened state, as a Florentine goldsmith of the Renaissance worked with real pearls. Upon a tiny teapot, decorated with blue rosettes and white stars on the dull, unglazed, golden-brown silicon ware, were counted five hundred different stars and rosettes, signifying a thousand motions of a hand which had learned its cunning only by ten thousand times ten



DESIGN FOR A PLAQUE. BY MISS C. J. BARBER.

thousand previous similar motions. Knowing this, one wonders that the little teapot could possibly be offered at the price marked upon it of five English shillings.

Ceramic decoration would be the most charming of occupations for women were all sure of being as well provided for as in the Doulton works. There are from six to ten large rooms furnished with long tables at which intelligent-looking young women and girls sit at their work under the general supervision of a "monitor" or directress. The chatter is feminine in briskness, and no embargo seems laid upon it. The workwomen are all beyond a certain grade of artistic development, being obliged to present specimens of their skill in drawing and color with application for employment, and no one is accepted beneath a definitely marked standard. There is much artistic emulation among them, and perhaps the usual amount of jealousy and envy, arising from the ambition of every one to be advanced a grade in artistic production beyond her fellows. They are all of good position in life, superior to the class comprehended in England under the name of "workingwomen." They live usually with parents or relatives, or in respectable lodgings, and as a rule continue in the works till they leave to be married. It is astounding to realize, in view of the vast renown of the "Doulton," and the extent of its manufacture, that it celebrated its tenth birthday only a few weeks ago. It is difficult to point out an instance of such wide and

speedy fame, and swift fortune. Being so short a time in operation the firm employs many of the same women to-day with whose help it sent forth its first artistic products.

No associations, literary, social, or protective exist among them, but all have the use of a good library belonging to the works. The discipline is firm in the matters of industry and moral conduct; otherwise the girls seem as free as it is possible for bread-winners to be.

In the matter of earnings, the degrees are as various as the grades of talent. Beginners earn sometimes ten shillings a week, and some are beginners forever in this as in everything else. The advanced artists work by the piece, and some make five pounds or twenty-five dollars a week. Studying the work that they do one is inclined to think these same artists might get higher prices for the same work in the world outside. But they probably reflect that the world is an uncertain market, and the public a fickle buyer, and five pounds a week with the Doultons better than twenty-five pounds this week outside, and nothing a week for many a week to come.

Much of the Doulton faïence is underglaze painting, and much "slip" painting, or a sort of *pâte-sur-pâte*. There is nothing whatever mechanical in these, and the manipulation must be artistic or nothing. A lovely ebonized cabinet in the museum has faïence panels which at first sight suggest an imitation or reminiscence of the famous "Vernis-Martin." The decoration, however, is floral, with nothing imitative of Boucher or suggestive of la Pompadour about it, and only the golden ground gives the first "Vernis-Martin" impression. The floral decoration consists of sprays of small pink blossoms on long willowy stalks, with brilliant humming-birds darting down into the golden hearts of pearly-leaved water-lilies floating on pale water below. The disk designs are usually in a style of late Florentine mediævalism, or of romantic modern realism. Many are royally rich floral designs refined in tone though so rich in quality. One plaque of slip painting is a perfect vision of sunny tone thrown over brilliant autumn leaves, the whole plaque seeming as if steeped in some subtle essence resulting from an alchemist's search after the secret of the precious metal, not yet gold but almost so.

MARGARET BERTHA WRIGHT.

GENUINE AND IMITATION  
"SATSUMA."

IN Dr. Dresser's admirable work on "Japan," reviewed at length in another department of this issue, we find some interesting notes on the beautiful pale vellum-colored "Satsuma ware," of which one hears so much and sees so little. Persons in this country

who suppose that they can go to almost any first-class dealer in ceramic wares and "pick up" pieces of old Satsuma will be surprised to learn from Dr. Dresser that it has become so rare even in Japan that during the whole of his travels in that country he saw only three pieces, and thirty-five dollars was asked for a small teapot. In nine cases out of ten, collectors will find that their Satsuma specimens were made in Awata. "Even the Satsuma ware now being produced is about ten times as costly as Awata ware, and yet it is only a keen eye that can distinguish between the two. Awata and Awaji produce work, which, while bearing a close resemblance to real Satsuma wares can scarcely be said to be deceptive imitations of the more valuable productions of the South. But this cannot be said of some of the works fabricated at Shiba, in Tokio, and at Ota, near Kanagawa. Here two factories, possessed of the means of producing excellent works, have been established for simulating old works and producing deceptive copies of the most valuable pieces of Satsuma ware. So far has this unworthy manufacture been carried that when the work is finished it is even dipped into a dirty mixture to impart to it the appearance of age. But there is one peculiarity which characterizes most of the productions of both Shiba and Ota; they are decorated with figures of Buddhist saints, whose heads are surrounded each by a nimbus," a mode of decoration which Dr. Dresser cannot learn was ever used in the manufacture of real Satsuma.